

Alexandra Bettencourt  
Advisor: Sarah Reed

Poster title: Effects of Poor Maternal Nutrition During Gestation on Colostrum and Milk Quality in Sheep

Alexandra B. Bettencourt, Nicole Tillquist, Amanda Reiter, Mia Kawaida, Brandon Smith, Kristen E. Govoni, Steven A. Zinn, and Sarah A. Reed

Maternal over- and under-nutrition have negative effects on the growth and development of offspring. Colostrum and milk are critical to neonatal development, and composition and quality of colostrum and milk may be influenced by maternal factors, including diet. In this study, 46 pregnant ewes received one of three diets, 60% (RES), 100% (CON), or 140% (OVER) of National Research Council (NRC) nutrition requirements for total digestible nutrients from d 30 of gestation until parturition. Colostrum samples were collected within 24 hours of parturition. Milk samples were collected on d 3 and d 21 postpartum. Total solid concentrations of samples were measured utilizing Brix refractometry. Total solids decreased 7.9% at d 3 and 8.6% at d 21 compared with d 0 (d 0:  $1.15 \pm 0.013$ , d 3:  $1.06 \pm 0.002$ , d 21:  $1.05 \pm 0.001$ ;  $P < 0.0001$ ). There were no detectable effects of maternal diet or interaction of maternal diet and time point on total solids ( $P > 0.35$ ). Further analysis of milk components and lamb serum to evaluate the success of passive transfer in offspring from ewes fed a poor diet during gestation are warranted.